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House of Representatives

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

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March 25, 2020

The Honorable Gene L. Dodaro
Comptroller General of the United States
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Dodaro,

As you know, the Department of Energy (DOE) has the difficult task of cleaning up hazardous and radioactive waste at sites across the country from energy research and nuclear weapons production dating back to World War II and the Cold War.[1] DOE's cleanup mission includes remediating contaminated soil and groundwater; deactivating and decommissioning contaminated buildings; and designing, constructing, and operating facilities to treat millions of gallons of radioactive waste.

DOE's Office of Environmental Management (EM) is responsible for most of the Department's cleanup activities and faces an environmental liability of $377 billion as of fiscal year 2018. These costs will likely grow as EM continues its cleanup operations in the upcoming decades. Several remaining sites—including Hanford, Savannah River, and Idaho—pose particularly complex clean-up challenges for EM.[2]

The 2017 National Defense Authorization Act included language instructing the National Academies of Sciences, Engineering, and Medicine to conduct a review of EM's science and technology (S&T) development. The National Academies found that while S&T can increase the efficiency and reduce future costs of clean up, this has been a diminishing priority for EM.

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[1] The federal government is financially liable for cleaning up areas where federal activities have contaminated the environment. Various federal laws, agreements with states, and court decisions require the federal government to clean up environmental hazards at federal sites and facilities—such as nuclear weapons production facilities and military installations. Federal accounting standards require agencies responsible for cleaning up contamination to estimate future cleanup and waste disposal costs and to report such costs as environmental liabilities in their annual financial statements.

[2] GAO, *Department of Energy: Program-Wide Strategy and Better Reporting Needed to Address Growing Environmental Cleanup Liability*, GAO-19-28 (Washington, D.C.: Jan. 29, 2019); and National Academies of Sciences, Engineering, and Medicine, "Independent Assessment of Science and Technology for the Department of Energy's Defense Environmental Cleanup Program." (2019) Washington, DC: The National Academies Press. https://doi.org/10.17226/25338.

Specifically, while funding for headquarters-managed S&T development was about $300 million (5%) of EM's budget in the 1990s and early 2000s, it has declined to about $25 million (0.3%) for fiscal year 2020.[3]

A primary reason that EM has not prioritized S&T development in recent years is that it has shifted its focus to deployment of existing technologies. However, substantial research from the National Academies, the Consortium for Risk Evaluation with Stakeholder Participation, and other advisory bodies has identified the importance of ongoing development of new technologies for EM's cleanup mission. In particular, the National Academies recommends "DOE EM should work cooperatively with ARPA-E," a program the Committee on Science, Space, and Technology is working to reauthorize, in order to implement "breakthrough technologies and solutions into the cleanup program."[4] Further, GAO has found that using risk-informed decision-making could better enable DOE to prioritize its resources and that such decisions should use current scientific knowledge and practice to produce technically credible results.[5]

DOE's National Laboratories play a key role in providing an avenue for new S&T development. The Savannah River National Laboratory—EM's lead national laboratory—has developed, deployed, and optimized key technologies to facilitate nuclear waste remediation.[6] EM has also developed a National Laboratory Network through which it can access resources from other national laboratories to support ongoing technology development and deployment.[7]

To further assist in understanding the status of EM's S&T development efforts as well as opportunities to use new technology to facilitate reduced costs and time needed for clean-up, we ask GAO to examine the following questions:

1. What process, if any, does EM use to identify its S&T development priorities?
    a. How does it balance crosscutting priorities established at the Headquarters level against more site-specific priorities?

2. What challenges, if any, does EM face in developing and adopting new remediation technologies, and what incentives, if any, does EM give its contractors to develop and adopt new remediation technologies?

3. What is known about approaches to S&T development related to nuclear waste remediation in other countries, and what lessons, if any, can be learned from these approaches?

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[3] National Academies of Sciences, Engineering, and Medicine, "Independent Assessment of Science and Technology for the Department of Energy's Defense Environmental Cleanup Program," https://doi.org/10.17226/25338.

[4] https://www.nap.edu/resource/25338/DOE%20S&T%20highlights_white.pdf

[5] GAO, *Environmental Liabilities: DOE Would Benefit from Incorporating Risk-Informed Decision-Making into Its Cleanup Policy*, GAO-19-339 (Washington, D.C.: Sept. 18, 2019).

[6] https://srnl.doe.gov/em.htm

[7] https://www.energy.gov/em/program-scope/em-national-laboratory-network

4. To what extent does EM coordinate with other offices within DOE, the National Laboratories, and outside stakeholders on remediation S&T development?
    a. To what extent should ARPA-E be involved in coordinating the advancements of these technologies?

5. To what extent has EM assessed whether it has sufficient resource and staff skillsets needed for remediation S&T development?

Pursuant to Rule X of the U.S. House of Representatives, the Committee on Science, Space, and Technology is delegated oversight jurisdiction over all laws, programs, and Government activities relating to nonmilitary research and development.[8]

Your assistance with this matter is greatly appreciated. If you have any questions, please contact Adam Rosenberg or Janie Thompson of the Majority Committee staff at 202-225-6375 and Hillary O'Brien and Tom Connally of the Minority Committee staff at 202-225-6371.

Sincerely,

Eddie Bernice Johnson
Chairwoman
Committee on Science, Space & Technology

Frank Lucas
Ranking Member
Committee on Science, Space & Technology

[8] Rule X, Organization of Committees, U.S. House of Representatives, accessed here: https://www.govinfo.gov/content/pkg/HMAN-115/xml/HMAN-115-pg441.xml